

REMARKS

Applicants' invention relates to a process for the preparation of a patterned polyurethane backed tufted good. This process comprises (1) applying a puddle of a reactive polyurethane mixture to the back side of a greige good or a precoated greige good, (2) passing the greige good coated with the reactive polyurethane mixture under a doctoring device, wherein the edge of the doctoring device is patterned or has a removable attachment that is patterned, and thus forms a pattern in the polyurethane mixture as it passes under the edge of the doctoring device or removable attachment, and (3) curing the polyurethane backed greige good which exhibits the desired pattern in the polyurethane backing. Suitable reactive mixtures comprise (a) at least one polyisocyanate component, (b) at least one isocyanate-reactive component, (c) at least one non-Newtonian thickener, and (d) at least one filler.

A restriction requirement under 35 U.S.C. 121 was made between the invention of Group I, i.e. Claims 1-29, and Group II, i.e. Claims 30-31.

It is noted by Applicants that the claims identified as Group II claims in the February 5, 2004 Office Action on page 2, section 1 are Claims 30 and 21. Applicants have assumed this to be a typographical error based on the discussion concerning the restriction requirement between the Examiner and the undersigned agent on January 26, 2004. If the undersigned agent has misunderstood and the restriction requirement between Group I and Group II does include Claim 21 in Group II, it is respectfully requested that the restriction requirement be further clarified. More specifically, please clarify which Group encompasses Claim 31. The present election is based on the Applicants understanding of the restriction requirement as stated above.

Applicants hereby confirm their provisional election to prosecute the invention of Group I, i.e. Claim 1-29, at this time. Accordingly, Claims 30-31 have been withdrawn from consideration by the above amendment.

An election of species and sub-species was also made by the Examiner. Within Group I, Applicants were required to elect from (1) Species I as described in the specification on page 9, line 26 through page 11, line 4, and which reads on

Claims 1-15; and (2) Species II as described in the specification beginning on page 11, line 4, and which reads on Claims 16-29. The first species (Species I) is directed to forming a pattern in the polyurethane using a doctoring device. The second species (Species II) is directed to forming a pattern in the polyurethane by pressing a secondary backing which has a pattern into the polyurethane.

Applicants respectfully submit that the first embodiment of the present invention as described in the specification which begins on page 9, line 26 as stated by the Examiner, includes several optional embodiments starting on page 9, line 32 through page 10, line 18. Thus, the complete description of the invention in its broadest sense is actually set forth in the specification on page 9, lines 26-31 and on page 10, line 19 through page 11, line 4.

Within Species I, an election between Sub-Species I-A, directed to an inorganic thickener (and reading on Claims 3-10), and Sub-Species I-B, directed to an organic thickener (and reading on Claims 11 and 12), was also required if Species I was elected.

Within Species II, an election between an Sub-Species II-A, directed to an inorganic thickener (and reading on Claims 18-25), and Sub-Species II-B, directed to an organic thickener (and reading on Claims 26 and 27), was also required if Species II was elected.

As previously stated, Applicants confirm their election of Species I, and further elect Sub-Species I-A, wherein the non-Newtonian thickener is an inorganic thickener. Accordingly, the invention of Species I which is claimed by Claims 1-15 has been elected for prosecution. With Species I, Sub-Species I-A, reading on Claims 3-10, wherein the non-Newtonian thickener is an inorganic thickener has been elected. In view of the restriction requirement and the above elections, Applicants have cancelled Claims 11-12, and 16-31. Accordingly, Claims 1-10 and 13-15 are pending and elected for prosecution at this time.

With respect to the Examiner's comments concerning the Information Disclosure Statement, Applicants respectfully submit that a proper Information Disclosure Statement was submitted by Applicants citing the references identified in their specification on a PTO-1449, along with their application. An initialed copy of

the PTO-1449 was received from the Examiner, which indicates that the references cited by Applicants have been considered. The PTO-1449 was dated January 28, 2004 by the Examiner.

Rejection under 35 U.S.C. 102(b)

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by the Bogdany reference (U.S. Patent 4,423,103).

The Bogdany reference discloses a method of forming patterns on fabrics such as, for example, carpets. This method comprises pouring and spreading a liquid frothed organic polymeric composition on the advancing surface of a fabric to form a froth layer of substantially uniform gauge on the fabric, creating a pattern in the froth by reciprocating at least one rake which has a plurality of tines across and through the froth as it advances beneath the rake, wherein the tines of the rake penetrate at least the outer surface layers of the froth and the tines are positioned at an angle of from about 45 to about 135 degrees to the surface of the froth, and curing the froth to result in a fabric with a solid, adherent, patterned froth or cellular layer on the fabric. Carpets having a resilient foam underlay adhered to the back of the carpet and comprising a plurality of parallel, serpentine rows of a cured cellular organic polymeric composition are also described.

Applicants respectfully submit that the Bogdany reference does not anticipate the presently claimed invention.

The proper standard of anticipation is one of strict identity. (See *In re Donohue*, 226 U.S.P.Q. 619 (Fed. Cir 1985).) The court clearly indicated that a rejection based on anticipation "requires a showing that each limitation of a claim must be found in a single reference, practice, or device". This is clearly not the case in the present rejection.

There are two key differences between the Bogdany reference and the presently claimed invention. First, the Bogdany reference describes a doctor blade or bar to doctor the froth to the required thickness and a rake with tines which is from 3 to 20 feet behind the doctor blade or bar (see column 1, line 68 through column 2, line 6; and column 3, lines 8-12). It is evident that the thickness of the froth applied

to the back of the fabric or substrate is controlled by the doctor blade or doctor bar in this reference. The pattern is formed in the froth after the thickness of the froth has been adjusted by the doctor blade or bar. Furthermore, it is the tines of the rake that form the pattern in the froth of the Bogdany reference. (See column 2, lines 3-6; column 2, line 59 through column 3, line 22.)

It is noted that the Examiner has characterized the rake of this reference as "a second doctor blade that is patterned to form a pattern in the polyurethane mixture" (see page 6 of the Office Action dated February 5, 2004, section 10, second paragraph, lines 4-5 therein). Applicants respectfully submit that this is an improper characterization of the Bogdany reference and its disclosure!

The Bogdany reference simply does not disclose or describe the rake as a "doctor blade" or "doctor bar". It is respectfully submitted that it is improper for the Examiner to only read bits and pieces of the reference to arrive at an interpretation of the reference that is contrary to the disclosure and/or what one of ordinary skill in the art would interpret the disclosure as meaning. Any construction of invention of the Bogdany reference relied upon to establish anticipation of the presently claimed invention must correspond to what is expressly disclosed and described therein. The Examiner's opinion is simply not relevant!

Applicants respectfully submit that it is improper for the rake of the Bogdany reference to be considered a "doctor blade". It is evident from the reference that Bogdany was clearly aware of "doctor blades", yet he selected the term "rake" to describe the portion of the device which forms the pattern in the froth. If it was the intent of the Bogdany reference for the rake to be a "doctor blade" with a patterned edge, why was it not described in such terms?

It is readily apparent that the Bogdany reference requires both a doctor blade to control the thickness of the froth, and a rake with tines to form a pattern in the doctored froth. The rake is a minimum of about 3 feet behind to a maximum of about 20 feet behind the doctor blade. See column 3, lines 8-12.

By comparison, the present invention only requires a doctor blade, and this doctor blade may either have a patterned edge or have a removable attachment wherein the attachment is patterned (page 10, lines 24-31). Applicants have found

that it is not necessary to pass the froth first under a doctor blade to control the thickness of the froth and then to form the pattern in the froth having the desired thickness as described by Bogdany. Rather, in accordance with the presently claimed invention, one doctor blade can control the thickness of the froth while simultaneously forming the pattern in the froth, provided of course, that it has a patterned edge or has a removable attachment with a patterned edge as required by the present claims.

Applicants respectfully submit that it is not disclosed or suggested by the Bogdany et al reference that one is able to control (i.e. gauge) the thickness of the froth and form a pattern in the froth simultaneously with one device, regardless of what that device is called (e.g. doctor blade, rake, etc.). This reference clearly leads one of ordinary skill in the art to believe that these must be done separately. In fact, it is expressly stated that the distance between the doctor blade and the rake depends on the type of polymer system used and its pot life (column 3, lines 8-12). This reference clearly indicates that it is necessary to allow some reaction of the froth to occur after the froth had been gauged to the proper/desired thickness, before forming a pattern in the froth. It is respectfully submitted that this is probably because the froth would not otherwise be capable of holding the pattern for reasons as discussed in depth later on. This is particularly true if the froth comprises a polyurethane reactive mixture.

With regard to the optional embodiment of the present invention where two doctor blades are present as disclosed on page 9, line 32 through page 10, line 9, and page 10, line 19 through page 11, line 4, Applicants respectfully submit that this embodiment is also not anticipated by the Bogdany reference. When two doctor blades are present in the present invention, there are two different puddles of reactive mixture being applied. The first puddle is applied prior to the first doctor blade and this is described as the precoat which is formed initially on the back side of the greige good. See page 9, line 32 through page 10, line 9. Precoats are clearly optional in the present invention. After the precoat is formed in this particular embodiment, a second puddle of a reactive polyurethane mixture is applied to the back side of the precoat, and this puddle is passed under the doctor blade which is

either patterned or has a removable attachment which is patterned. Obviously, in either embodiment of the present invention, the doctor blade which is patterned or has a removable attachment which is patterned must also gauge the thickness of the reactive polyurethane puddle that is applied immediately before this doctor blade and simultaneously form the desired pattern in the reactive polyurethane puddle.

Applicants respectfully submit that the Bogdany reference discloses applying a froth to a substrate, passing the substrate with the froth under a doctor blade to gauge/control the thickness of the froth, and then after the specified distance (based on type of polymer system and its potlife), using a rake with tines to form a pattern in the froth. Even if it would be proper to consider the rake with tines of the Bogdany reference "equivalent" to a doctor blade with a patterned edge or having a removable attachment which is patterned, the process of this reference does not disclose or suggest applying a second puddle of froth after the doctor blade and before the rake! Accordingly, even this optional embodiment of the presently claimed process which has two doctor blades is not anticipated by the Bogdany reference.

Furthermore, Applicants submit that the presently claimed invention is not anticipated by the Bogdany reference as this reference does not disclose or suggest non-Newtonian thickeners as required by the presently claimed invention. The statement by the Examiner that "Bogdany teaches the polyurethane mixture comprises polyisocyanate, polyol, clay (or calcium carbonate, silica, etc, i.e. non-Newtonian thickeners), and filler ..." is simply not correct. The clay, calcium carbonate, silica, and other such components disclosed as suitable for the polyurethane mixture by this reference are not non-Newtonian thickeners! One of ordinary skill in the art would readily recognize and understand this.

In fact, the Bogdany reference describes these materials as fillers at column 5, lines 12-15. It is respectfully submitted that these fillers essentially correspond to the fillers disclosed in the present application at page 7, lines 4-13 and which are identified as component (d) of present Claim 1. The skilled artisan would recognize these fillers are conventional fillers typically used in carpet backing formulations.

Non-Newtonian thickeners, i.e. component (c), as required by the present invention, are clearly not disclosed or suggested by the Bogdany reference. These

are described in the present specification on page 7, line 14 through page 9, line 20, with inorganic thickeners being described on page 7, line 19 through page 8, line 27. Suitable materials to be used as non-Newtonian inorganic thickeners include precipitated calcium carbonate, finely divided clays (e.g. smectite or layered clays), and precipitated or fumed silica.

The presently claimed invention clearly requires at least one non-Newtonian thickener. Since the Bogdany reference does not disclose such non-Newtonian thickeners, it is respectfully submitted that this reference does not anticipate the presently claimed invention.

Applicants respectfully submit that the presently claimed invention is not disclosed by the Bogdany reference with the specificity of an anticipatory reference. In view of the above, it is respectfully submitted that this rejection is improper and Applicants request that it be withdrawn.

Rejections under 35 U.S.C. 103(a)

Claims 1-10 and 13-15 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Stidham reference (U.S. Patent 4,354,810) in view of the Holeschovsky et al reference (WO 00/37737 believed to correspond to U.S. Patent 6,264,775).

The Stidham reference describes an apparatus for distributing a foamed composition on a movable substrate. A method for distributing a foamed fluid composition on a movable substrate to produce a foamed sheet material is also described. More specifically, in this apparatus a substrate is delivered from a feed roll or other means under a foam supply nozzle from which a foamed fluid is supplied from a reservoir, then the substrate with the foam composition is passed under a distribution means. This distribution means comprises a rotatable member and at least two attached distribution means which distribute the foamed composition on the substrate to form a foamed sheet material. The foamed sheet material then passes through other equipment such as, for example, a heating oven to dry and cure the foam before taking up the foamed sheet material on a roll. The distribution means or apparatus is a modified doctor roll which comprises a rotatable

member having a circular cross section having a number of attached distribution means with longitudinal arcuate sections (i.e. sleeve members) which are of about equal length to and concentric with the rotatable member and whose inner surfaces conform with the external surface of the rotatable member. As described therein, the rotatable member is in a position such that only one of the sleeve members is in a position to distribute the foamed composition on the substrate. These sleeve members impart the final surface pattern to the foamed sheet material. Different sleeve members produce different surface patterns. (See column 3, lines 10-22; column 3, lines 58-68; column 4, lines 15-26, lines 34-40 and lines 53-62.)

A process for the production of face-up coating of carpet backs with polyurethane is described by the Holeschovsky et al reference. The polyurethane adhesives described by this reference enable one to run polyurethane backed carpet manufacturing lines in the same "face up" manner practiced with conventional latex adhesive carpet manufacturing equipment, without dripping or running of the polyurethane adhesive due to changes in viscosity in the cure oven. Previously, it has been necessary to run carpet laminating lines using polyurethane reactive mixtures with the reverse side of the greige good facing up, to prevent loss of the polyurethane during the curing process. (See column 1, lines 5-8; column 2, lines 19-32; and column 2, lines 59-64.) The polyurethane adhesives suitable for this process contain non-Newtonian thickeners which result in the viscosity of the polyurethane being less sensitive to temperature changes (column 2, line 64 through column 3, line 1).

Applicants respectfully submit that this combination of references does not render the presently claimed invention obvious.

As described above, the Stidham reference broadly discloses that a doctor roll may be modified with attachable smooth or patterned distribution means to produce a pattern in foamed sheet materials. This apparatus and method do not require any particular foamed fluid composition. Rather, suitable foamed fluid compositions broadly described by this reference include styrene-butadiene synthetic rubber latex and polyurethane. No specific compositions details for any

these types of foams are disclosed in this reference, aside from what is set forth in the only working example.

This working example describes the foam as a styrene-butadiene latex in a no-gel spread foam recipe (column 6, lines 41-42). As set forth in Table 1 at column 6, lines 47-54, the foam comprises 100 pbw of latex, 0.5 pbw of sodium lauryl sulfate, 5.0 pbw of disodium n-octyldecylsulfosuccinamate, 5.9 pbw of curing paste, 200.0 pbw of calcium carbonate filler and 0.5 pbw of tan color.

It is readily apparent that the calcium carbonate filler described in the example of the Stidham reference is a conventional filler. Furthermore, this example is a latex foam not a polyurethane foam. Non-Newtonian thickener as required by the presently claimed invention are simply not disclosed or suggested by this reference.

Polyurethane adhesives containing non-Newtonian thickeners are disclosed by the Holeschovsky et al reference. The purpose of adding these to the polyurethane formulations therein is to enable one to run the carpet laminating line face up with a polyurethane formulation and prevent the run-off and/or dripping of the polyurethane during the curing stage.

One of ordinary skill in the art would not consider the Holeschovsky et al reference particularly pertinent to improving the process of forming patterns in the foam (polyurethane or latex) backing on carpet substrates. This reference does not disclose any information concerning the formation of patterns in the foam layers of carpet backing. Why would one of ordinary skill in the art believe or expect that the polyurethane compositions disclosed by Holeschovsky et al are as good as, much less better than, the polyurethane compositions disclosed in any of the other numerous references describing such compositions?

Applicants respectfully submit that the present rejection of the claims as being obvious under 35 U.S.C. 103(a) is clearly the result of hindsight construction of the prior art. There is no suggestion in the Stidham reference to include non-Newtonian thickeners in the polyurethane foam formulations described therein. Also, one of ordinary skill in the art has no insight upon reading the Holeschovsky et al reference that the polyurethane formulations containing non-Newtonian thickeners disclosed

therein would be particularly suitable for forming patterns. The advantage of adding non-Newtonian thickeners to a polyurethane foam formulation, applying this to a substrate, and passing the substrate backed with this formulation under a doctor roll (or blade or bar) which may be modified with an attachment to form a pattern in the foam (as described by the Stidham reference) would **not** be evident to one of ordinary skill in the art who had not read Applicants' specification! Only after reading the present specification does this advantage become "obvious" to the skilled artisan. Such a perspective does **not**, however, provide a proper basis for the rejection of the presently claimed invention as being *prima facie* obvious under 35 U.S.C. 103(a).

Furthermore, it is respectfully submitted that the working examples of the present application illustrate the unexpected advantages of the present invention vs. the cited references. Examples 1, 2 and 3 are representative of the presently claimed invention, and Examples C1, C2 and C3 are comparative examples. A small quantity of a non-Newtonian thickener is added to virtually the same polyurethane formulation as in Examples C1, C2 and C3. Each of these foam formulations was frothed, applied to a greige good and gauged using a trowel with teeth along the edge to create a ribbed pattern. In Examples C1, C2 and C3, the ribs starting flowing into the grooves created by the teeth of the trowel, thus creating rounded edges. Furthermore, after curing, there was no evidence of ribs being formed in the foam backing of Examples C1, C2 and C3. By comparison, in Examples 1, 2 and 3, the formed ribs maintained their shape and were well defined, even after curing!

Applicants respectfully submit that one of ordinary skill in the art has no insight into this upon reading the Stidham reference and/or the Holeschovsky et al reference. Sufficient information is simply not disclosed in either reference which would suggest to the skilled artisan that the addition of non-Newtonian thickeners to polyurethane foam formulations enables the preparation of patterns in the foams as in the presently claimed process. It is not readily apparent from these references that the non-Newtonian thickeners alter the polyurethane reactive mixture in a manner that readily enables not only the formation of patterns, but also results in the patterns being maintained and well defined, before, during and after the curing

process. This is not simply not suggested to the skilled artisan upon reading these references.

It is evident from the number of references cited in the present Office Action that forming a pattern in the foam backing material of a greige good is the easy part. This is particularly true when working with latex foams. It has not, however, been so easy or simply when working with polyurethane foams. The formation of the patterns in polyurethane foams may be accomplished using some (but not all) of the same techniques which are suitable for latex foams. It has, however, been **difficult at best** to maintain the patterns formed in a polyurethane foam in a well defined shape or form throughout the process (including during and after curing).

The presently claimed invention is not fairly suggested to one of ordinary skill in the art by this combination of references. Applicants respectfully submit that this rejection is improper and request that it be withdrawn.

Claims 1-10 and 13-15 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Holeschovsky et al reference (WO 00/37737 believed to correspond to U.S. Patent 6,264,775) in view of any one of the Stidham reference (U.S. Patent 4,354,810), the Satiar reference (GB 2160790), the Davis et al reference (U.S. Patent 5,045,375) or the Bogdany reference (U.S. Patent 4,423,103). (The Holeschovsky et al, the Stidham, and the Bogdany references are described hereinabove.)

The Satiar reference describes the manufacture of carpet underlays which incorporate a layer of foamed rubber, and the formation on the surface of the rubber of distinctive patterns which enhance the product appearance and its performance. As described therein, a foamed rubber latex is deposited on a surface of a sheet of backing material or on the reverse side of the carpet, this material is then moved under a doctor blade which extends transversely across the surface and spreads the latex foam over the surface. This is followed by imparting reciprocating movements between the surface and the doctor blade, which result in a pattern in the foamed rubber while the rubber is spread across the surface, and then dried. This reference is specific to rubber latex systems. Polyurethane foams are not even disclosed or suggested.

A nonskid polyurethane coating is described by the Davis et al reference. This coating is provided by placing or forming a patterned polyurethane on the carpet, wherein the polyurethane is permanently tacky. A method for forming the precoat coating is also disclosed. This method comprises preparing a precoat, applying the precoat to the substrate in a predetermined thickness, preparing a nonskid coating comprising a polyurethane and including a fast reacting means for forming a polyurea to render the nonskid coating thixotropic. These nonskid coatings can be applied in a uniform coating, or in the form of ribs or other discrete shapes placed on the back of the carpeting. Notched (or patterned) doctor blades are disclosed therein for creating ribs and reducing the quantity of material required for the nonskid coating.

Applicants respectfully submit that the presently claimed invention is not rendered obvious by the Holeschovsky et al reference in view of any of the secondary references.

As set forth above, the Holeschovsky et al reference is directed to a process for face-up coating of carpet backs with a polyurethane composition. It is respectfully submitted that one of ordinary skill in the art would not be motivated to substitute a patterned doctor blade from any of the secondary references for the unpatterned doctor blade of the Holeschovsky et al reference in an effort to form a pattern in the polyurethane backing of a greige good.

It is evident from the express disclosure of the Holeschovsky et al reference that most polyurethane compositions are simply not suitable for conventional face-up coating processes that are typically used for latex coating of greige goods. A conventional face-up coating process or line has the "face-side" of the greige good facing up and the foam backing is applied to the reverse-side of the greige good. Figure 1 of this reference illustrates a conventional latex line. As shown therein, the greige good is maneuvered such that the face-side faces down and the puddle or reactive mixture is applied, then gauged to a suitable thickness by passing under a doctor blade or bar. Shortly after this, the greige good with the reactive mixture coated on the reverse-side is "flipped" so that throughout the rest of the assembly, including the curing oven, the face-side of the greige good is facing up. The

properties of latex foam forming mixtures are such that these do not drip off the reverse side of the greige good, even when the reverse-side is facing down, and no significant loss of latex occurs even in the curing oven. See column 1, line 58 through column 2, line 4 of the Holeschovsky et al reference.

As described in the primary reference, the polyurethanes exhibit a decrease in viscosity prior to cure, and thus a considerable loss of the polyurethane results during curing unless the line is run with the reverse side of the greige good facing up. See column 2, lines 18-32 of the Holeschovsky et al reference. The invention of the Holeschovsky et al reference provided a solution that enabled one to run a conventional latex line assembly with the face-side of the greige good facing up while using a polyurethane mixture to form the foam backing.

Applicants respectfully submit that one of ordinary skill in the art is well aware of the difficulty and problems with trying to run a polyurethane system on a conventional face-up coating line for carpet backing for the reasons as discussed in the Holeschovsky et al reference. The skilled artisan is also aware of the difficulty in forming, and particularly in maintaining well defined patterns in foam backings of polyurethane on carpet backs even when the system or line is operated in a face-down manner (i.e. the reverse side of the greige good is facing up). In light of this information, one of ordinary skill in the art would simply not be motivated to substitute any of the patterned doctor blades or bars from any of the secondary references for the unpatterned doctor blade in the process of the Holeschovsky et al reference which is a face-up coating process!

Combining any of the secondary references with the Holeschovsky et al reference simply does not provide the skilled artisan any reasonable basis to expect and/or believe that by substituting a patterned doctor blade for the unpatterned doctor blade therein, that one could both form and maintain a well defined pattern in the polyurethane reactive mixture applied to the reverse side of the greige good, which is cured with the face-side of the greige good facing up! The known difficulties associated with both face-up coating processes for carpet backs using polyurethane mixtures, and with forming/maintaining a well-defined pattern in a polyurethane mixture even in face-down coating processes would clearly dissuade one of ordinary

skill in the art from making the substitution necessary to arrive at the presently claimed invention. It is respectfully submitted that the disclosure by the Holeschovsky et al reference that the addition of the non-Newtonian thickeners described therein enable one to run a face-up assembly line does not imply or suggest that these same thickeners enable one to form and readily maintain patterns in polyurethane reactive mixtures!

Sufficient information is simply not disclosed in any of these references which would clearly suggest the necessary changes to arrive at the presently claimed invention. Only **after** reading the present specification does it become "obvious" to proceed as Applicants' have. Such a perspective does **not**, however, provide a proper basis for rejecting the present claims as being *prima facie* obvious under 35 U.S.C. 103(a).

It is further submitted by Applicants that the Satiar reference is not particularly relevant to the presently claimed invention. No mention of polyurethane backing or foam is disclosed therein. For the reasons as discussed hereinabove concerning the differences in forming patterns in latex foams vs. polyurethane foams, one of ordinary skill in the art would not consider substituting the doctor blade from this reference for that of the Holeschovsky et al reference.

The Davis et al reference offers one "solution" for forming patterns in polyurethane foams for carpet backing. This process requires a secondary coating comprising a di- or poly-functional isocyanate, a di- or poly-functional polyol, and a di- or tri-functional aliphatic or aromatic amine (column 5, lines 4-14). This actually results in a polyurea-urethane, i.e. a compound having both urea groups and urethane groups. It is well known that amines are fast-reacting with isocyanates compared to hydroxyl group containing polyols. Thus, this reaction proceeds quickly and enables the coating to hold the desired shape or form. See column 5, lines 15-29 of the Davis et al reference.

It is respectfully submitted that it is readily apparent to one of ordinary skill in the art that the Davis et al reference solves the problem associated with forming and maintaining patterns in polyurethane foams by including an amine group containing compound in the formulation, which alters the reactivity of the system. At best, it is

unclear how combining amine group containing compounds from this formulation would behave when used in combination with the polyurethane reactive mixtures of the Holeschovsky et al reference (which contain non-Newtonian thickeners). Furthermore, in light of the fact that the Davis et al reference provides a workable solution to forming a patterned foam formulation, one of ordinary skill in the art would **not** be motivated to further combine the patterned doctor blade as described therein with the composition of the Holeschovsky et al reference. Accordingly, this combination also does not fairly suggest the presently claimed invention to one of ordinary skill in the art.

Applicants respectfully submit that the Holeschovsky et al reference, either taken alone, or in combination with one or more of the secondary references simply does not suggest the presently claimed invention to one of ordinary skill in the art. It is requested that these rejections are in error and requested that they be withdrawn.

Claims 3-10 and 13-15 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Bogdany reference (U.S. Patent 4,423,103) alone, and further in view of the Holeschovsky et al reference (WO 00/37737 believed to correspond to U.S. Patent 6,264,775)

The Bogdany reference and the Holeschovsky et al references have been described and discussed in detail above. Applicants respectfully submit that the presently claimed invention is not rendered obvious by the Bogdany reference alone on in combination with the Holeschovsky et al reference.

As set forth above, the Bogdany reference does not disclose or suggest the presently required non-Newtonian thickeners. The components identified by the Examiner as corresponding to these non-Newtonian thickeners are actually conventional fillers. The Bogdany reference also requires a doctor blade or bar to gauge the thickness of the reactive mixture on the greige good, and a rake with tines to form a pattern in the reactive mixture after it has been gauged to the desired thickness. It is evident from the express disclosure of this reference that these can not be done simulatenously. The gauging must be done first, and then after an appropriate time/space period as determined by the specific reactive mixture, a pattern can be formed in the gauged reactive mixture. There is no indication in the

Bogdany reference that one could both gauge the thickness and form the pattern simultaneously as in the present invention. Accordingly, Claims 3-10 and 13-15 are not rendered obvious by the Bogdany reference alone!

It is further submitted by Applicants that combining this reference with the Holeschovsky et al reference does not fairly suggest the presently claimed invention to one of ordinary skill in the art. Even if one adds the non-Newtonian thickeners of the Holeschovsky et al reference in a reactive polyurethane mixture and uses this combination in the process disclosed by the Bogdany reference, this is **not** the presently claimed invention!

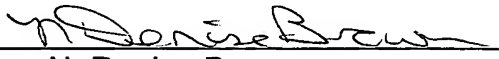
As discussed previously, the Bogdany reference requires both a doctor bar or blade to gauge the thickness of the reactive mixture and a rake with tines at a specified distance behind the doctor blade or bar which forms the pattern in the reactive mixture! Applicants have found that these steps can be accomplished simultaneously when non-Newtonian thickeners are added to a polyurethane reactive mixture. For these reasons, as well as those discussed above concerning the optional embodiment of the present invention wherein two doctor blades are present, it is respectfully submitted that this combination of references does not result in the presently claimed invention. Nor do these reference suggest the necessary changes to the skilled artisan to "arrive at" the presently claimed invention.

Only **after** reading the present specification does Applicants' invention become "obvious" to one of ordinary skill in the art. Such a perspective does **not**, however, provide a proper basis for rejecting the presently claimed invention as being *prima facie* obvious under 35 U.S.C. 103(a)!

It is respectfully submitted that the presently claimed invention is not obvious in view of the Bogdany reference alone, or in combination with the Holeschovsky et al reference. Applicants' submit that this rejection is in error and request that it be withdrawn.

In view of the preceding amendments and remarks, Applicants respectfully submit that each of these rejections are in error. The allowance of Claims 1-10 and 13-15 is respectfully requested.

Respectfully submitted,

By 
N. Denise Brown
Agent for Applicants
Reg. No. 36,097

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3804
FACSIMILE PHONE NUMBER:
(412) 777-3902

/jme/DB/DB0433